

[54] **FRACTIONATION AND ISOLATION OF 7S AND 11S PROTEIN FROM ISOELECTRICALLY PRECIPITATED VEGETABLE PROTEIN MIXTURES**

[75] Inventors: William F. Lehnhardt, Decatur; Paul W. Gibson, Mt. Zion; Frank T. Orthofer, Decatur, all of Ill.

[73] Assignee: A. E. Staley Manufacturing Company, Decatur, Ill.

[21] Appl. No.: 291,760

[22] Filed: Aug. 10, 1981

[51] Int. Cl.<sup>3</sup> ..... A23J 1/14

[52] U.S. Cl. .... 260/123.5; 260/112 R; 426/52; 426/63; 426/634; 426/656; 435/18; 435/23; 435/24; 435/272

[58] Field of Search ..... 260/123.5, 112 R; 435/18, 23, 24, 272

[56] **References Cited**

**U.S. PATENT DOCUMENTS**

1,373,651	4/1921	Cullen	426/656 X
2,381,407	8/1945	Levinson et al.	260/112
2,489,208	11/1949	Turner	195/29
2,502,029	3/1950	Sair et al.	99/14
3,502,482	4/1950	Sair et al.	99/14
3,814,816	6/1974	Gunther	426/46
3,870,801	3/1975	Tombs	426/92
3,953,611	4/1976	Youngquist	426/93
4,188,399	2/1980	Shemer	260/123.5 X

**FOREIGN PATENT DOCUMENTS**

1377392 12/1974 United Kingdom .

**OTHER PUBLICATIONS**

Smith et al.—Peptization of Soybean Proteins . . . Salt-s—Ind. & Eng. Chem., vol. 30, No. 12, 1938, pp. 1414–1418.

Thanh et al.—Major Proteins of Soybean Seeds . . . Characterization—Jr. Agr. & Food Chem., vol. 24, No. 6, 1976, pp. 1117–1121.

Eldridge et al.—Purification of the 11S Component of Soybean Protein—Cereal Chem., vol. 44, Nov. 1967, pp. 645–654.

Briggs et al.—An Electrophoretic Analysis of Soybean Protein—Cereal Chemistry, vol. 27, May 1950, pp. 243–257.

Wolf et al.—Purification and Characterization of the 11S Component of Soybean Proteins—Archives of Biochem. & Biophys. 85, pp. 186–199, (1959).

Enzyme Nomenclature—Recommendations (1972) of the International Union of Pure and Applied Chemistry & The International Union of Biochemistry.

*Primary Examiner*—Howard E. Schain

*Attorney, Agent, or Firm*—M. Paul Hendrickson;

Charles J. Meyerson

[57] **ABSTRACT**

The 7S and 11S proteins of vegetable proteins may be effectively fractionated and isolated by selectively extracting 7S proteins from an isoelectrically precipitated mixture of 7S and 11S protein in the presence of water-soluble salts. The initial 7S extraction is typically conducted at a pH 5.0–5.6. An enriched 11S fraction is recovered by separating the water-insoluble 11S protein from the water-soluble enriched 7S extract.

**13 Claims, No Drawings**